

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A multi-modulation mode air interface frame format comprising:

an overhead portion including a first plurality of time slots;

B a plurality of overhead bursts located within respective ones of the first plurality of time slots and transmitted using a first of a plurality of modulation modes, the first modulation mode including a lowest order modulation mode of the plurality of modulation modes;

a traffic portion including a second plurality of time slots following the first plurality of time slots; and

a plurality of traffic bursts, wherein ones of the plurality of traffic bursts are located within one or more of the second plurality of time slots, wherein each of the plurality of traffic bursts are modulated using one of [a] the plurality of modulation modes.

Claim 2 (canceled)

Claim 3 (currently amended) The frame format of Claim 2 1 wherein ~~said plurality of overhead bursts are modulated using~~ the first modulation mode includes quadrature phase shift keying.

Claim 4 (original) The frame format of Claim 1 wherein said each of said plurality of traffic bursts comprises one of a plurality of burst types.

Claim 5 (previously amended) The frame format of Claim 4 wherein durations of ones of said plurality of traffic bursts, comprising ones of said plurality of burst types, are multiples of each other.

13/ Claim 6 (original) The frame format of Claim 4 wherein said plurality of burst types comprises a single burst type or a quad burst type.

Claim 7 (original) The frame format of Claim 6 wherein a duration of said quad burst type is a multiple of a duration of said single burst type.

Claim 8 (previously amended) The frame format of Claim 1 wherein ones of said plurality of traffic bursts using ones of said plurality of modulation modes have durations that are multiples of durations of one or more of other ones of said plurality of traffic bursts using other ones of said plurality of modulation modes.

Claim 9 (original) The frame format of Claim 8 wherein said multiple comprises an integer multiple.

Claim 10 (original) The frame format of Claim 1 wherein said plurality of modulation modes comprises quadrature phase shift keying, 16-quadrature amplitude modulation, and 64-quadrature amplitude modulation.

Claim 11 (original) The frame format of Claim 10 wherein the duration of a quadrature phase shift keying traffic burst is three times as long as a 64-quadrature amplitude modulation traffic burst and is twice as long as a 16-quadrature amplitude modulation traffic burst.

Claim 12 (previously amended) The frame format of Claim 1 wherein durations of ones of said plurality of traffic bursts using said respective ones of said plurality of modulation modes are respective multiples of the duration of a traffic burst modulated by a highest order modulation mode of said plurality of modulation modes.

Claim 13 (original) The frame format of Claim 12 wherein said respective multiples comprises respective integer multiples.

Claim 14 (original) The frame format of Claim 1 wherein said each of said plurality of traffic bursts are capable of carrying signals comprising one of a plurality of transport mode signals.

Claim 15 (currently amended) The ~~multi-modulation mode air interface~~ frame format of Claim 14 wherein said plurality of transport mode signals comprise synchronous transport mode signals and asynchronous transport mode signals.

Claim 16 (currently amended) The frame format of Claim 1 further comprising a spare section ~~including a third plurality of time slots~~ located in between said first plurality of time slots and said second plurality of time slots.

Claim 17 (original) The frame format of Claim 1 wherein said plurality of traffic bursts comprises a plurality of differently sized traffic bursts.

Claim 18 (currently amended) A super frame air interface format comprising:

a plurality of multi-modulation mode air interface frame formats, wherein each of the plurality of multi-modulation mode air interface frame formats comprises:

an overhead portion including a first plurality of time slots;

a plurality of overhead bursts located within respective ones of the first plurality of time slots and transmitted using a first of a plurality of modulation modes, the first modulation mode including a lowest order modulation mode of the plurality of modulation modes;

a traffic portion including a second plurality of time slots following the first plurality of time slots; and

a plurality of traffic bursts, wherein ~~respective~~ ones of the plurality of traffic bursts are located within one or more of the second plurality of time slots, wherein each of the plurality of traffic bursts are modulated using ~~a-respective~~ one of a the plurality of modulation modes.

Claim 19 (original) A multi-transport mode air interface frame format comprising:

an overhead portion including a first plurality of time slots;

a plurality of overhead bursts located within respective ones of the first plurality of time slots;

a traffic portion including a second plurality of time slots following the first plurality of time slots; and

a plurality of traffic bursts, wherein respective ones of the plurality of traffic bursts are located within one or more of the second plurality of time slots; and

B) a plurality of transport mode signals, wherein respective ones of plurality of transport mode signals are contained within respective ones of the plurality of traffic bursts.

Claim 20 (original) The multi-transport mode air interface frame format of Claim 19 wherein said plurality of transport mode signals comprise synchronous signals and asynchronous signals.

Claim 21 (original) The multi-transport mode air interface frame format of Claim 19 wherein said plurality of transport mode signals comprise time division multiplexed signals and asynchronous transfer mode signals.

Claim 22 (original) The multi-transport mode air interface frame format of Claim 19 wherein said each of said plurality of traffic bursts is modulated using a respective one of a plurality of modulation modes.

Claim 23 (original) The multi-transport mode interface frame format of Claim 22 wherein said plurality of modulation modes comprises quadrature phase shift keying, 16-quadrature amplitude modulation, and 64-quadrature amplitude modulation.

Claim 24 (currently amended) A method of transmitting bursts over an air interface comprising:

creating a multi-modulation air interface frame format comprising a plurality of overhead time slots for containing overhead bursts and a plurality of traffic time slots for containing traffic bursts;

modulating the overhead bursts using a first of a plurality of modulation modes, the first modulation mode including a lowest order modulation mode of the plurality of modulation modes;

formatting traffic signals into the traffic bursts within the multi-modulation air interface frame format;

modulating each of the traffic bursts using ~~a respective~~ one of a the plurality of modulation modes on a burst by burst basis; and

transmitting the traffic bursts on the multi-modulation air interface frame format over the air interface.

Claim 25 (currently amended) The method of Claim 24 wherein said modulating each of the traffic bursts comprises ~~said~~ modulating said each of said traffic bursts using said one of said plurality of modulation modes, wherein said plurality of modulation modes comprises quadrature phase shift keying, 16-quadrature amplitude modulation, and 64-quadrature amplitude modulation.

Claim 26 (currently amended) The method of Claim 24 further comprising:

formatting overhead signals into the overhead bursts within said multi-modulation air interface frame format; ~~and~~

~~modulating the overhead bursts on said multi-modulation air interface frame format using only one of said plurality of modulation modes.~~

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Claim 27 (currently amended) The method of Claim 24 wherein said formatting comprises ~~said~~ formatting said traffic signals into said traffic bursts within said multi-modulation air interface frame format, wherein said traffic bursts comprise a plurality of burst types.

Claim 28 (currently amended) The method of Claim 27 wherein said formatting comprises ~~said~~ formatting said traffic signals into said traffic bursts, wherein said traffic bursts comprise quad bursts and single bursts.

Claim 29 (currently amended) The method of Claim 24 wherein said modulating each of the traffic bursts comprises ~~said~~ modulating said each of said traffic bursts using said one of said plurality of modulation modes, wherein respective durations of respective traffic bursts having been modulated by respective ones of said plurality of modulation modes are multiples of the durations of each other.

Claim 30 (currently amended) The method of Claim 24 wherein said modulating each of the traffic bursts comprises ~~said~~ modulating said each of said traffic bursts using said one of said plurality of modulation modes, wherein the durations of respective traffic bursts using respective modulation modes are respective multiples of the duration of a traffic burst modulated by a highest order modulation mode of said plurality of modulation modes.

Claim 31 (original) The method of Claim 24 wherein said formatting comprises formatting said traffic signals into said traffic bursts within said multi-modulation air interface frame format, wherein said traffic signals comprise a plurality of transport mode signals.

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Claim 32 (original) The method of Claim 24 wherein said formatting comprises formatting synchronous traffic signals and asynchronous traffic signals into said traffic bursts within said multi-modulation air interface frame format.

Claim 33 (original) The method of Claim 24 wherein said formatting comprises formatting time division multiplexed traffic signals and asynchronous transfer mode traffic signals into said traffic bursts within said multi-modulation air interface frame format.

Claim 34 (currently amended) The method of Claim 24 wherein said formatting comprises formatting said traffic signals into a differently sized traffic bursts within said multi-modulation air interface frame format.

Claim 35 (previously amended) A method of transmitting bursts over an air interface comprising:

creating a multi-transport mode air interface frame format having a plurality of first time slots for containing overhead bursts and a plurality of second time slots for containing traffic bursts;

formatting traffic signals into the traffic bursts within the multi-transport mode air interface frame format, wherein the traffic signals comprise a plurality of transport mode traffic signals;

modulating each of the traffic bursts; and

transmitting the traffic bursts on the multi-transport mode air interface frame format over the air interface.

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Claim 36 (original) The method of Claim 35 wherein said formatting comprises formatting said traffic signals into said traffic bursts within said multi-transport mode air interface frame format, wherein said traffic signals comprise synchronous traffic signals and asynchronous traffic signals.

Claim 37 (original) The method of Claim 35 wherein said formatting comprises formatting said traffic signals into said traffic bursts within said multi-transport mode air interface frame format, wherein said traffic signals comprise time division multiplexed traffic signals and asynchronous transfer mode traffic signals.

Claim 38 (currently amended) A method of formatting traffic bursts for an air interface frame format comprising:

formatting signals into overhead bursts and traffic bursts;

modulating the overhead bursts using a first of a plurality of modulation modes, the first modulation mode including a lowest order modulation mode of the plurality of modulation modes;

modulating the traffic bursts using ~~one~~ ones of a the plurality of modulation modes;
inserting the overhead bursts into first time slots on an air interface frame format; and
inserting the traffic bursts into second time slots on the air interface frame format,
wherein the traffic bursts modulated with respective ones of the plurality of modulation modes
comprise a different number of the second time slots on the air interface frame format.

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Claim 39 (previously amended) The method of Claim 38 wherein said inserting comprises
inserting said traffic bursts into said second time slots on said air interface frame format, wherein
a respective traffic burst using a highest order modulation mode of said plurality of modulation
modes has a duration of one or more of the second time slots, wherein respective traffic bursts
using remaining ones of said plurality of modulation modes have a duration that is a multiple of
the one or more second time slots.

Claim 40 (original) A traffic burst for a burst mode communications link comprising:

a preamble portion comprising:

a first unique word;

a second unique word; and

a data/spare section in between the first unique word and the second unique word,

wherein the data/spare section defines a preamble split length; and

a data portion following the preamble portion, wherein the data portion contains data.

Claim 41 (original) The traffic burst of Claim 40 further comprising:

a postamble portion following said data portion, wherein said postamble includes a parity.

Claim 42 (original) The traffic burst of Claim 40 further comprising:

a guard preceding said first unique word; and

a ramp preceding said first unique word and next to the guard.

Claim 43 (original) The traffic burst of Claim 40 wherein said first unique word is less than 16 symbols in length.

Claim 44 (original) The traffic burst of Claim 43 wherein said second unique word is less than 16 symbols in length.

Claim 45 (original) A method of formatting a traffic burst for a burst mode communications link comprising:

creating a preamble comprising a first unique word, a second unique word, and a data/spare section in between the first unique word and the second unique word, wherein the length of symbols between the first unique word and the second unique word defines a preamble split length;

creating a data portion;

placing data into the data portion; and

placing data into the data/spare section of the preamble.